

REMARKS

I. Introduction

In Response to the pending final Office Action, Applicants have incorporated the limitations of claim 13 into independent claim 1 to further clarify the subject matter of the present disclosure. Claims 13 and 14 have been cancelled, without prejudice. No new matter has been added.

A Declaration Under 37 C.F.R. § 1.132 from Kazuyuki Nishimoto, co-inventor of US Pat. No. 3,725,836 to Wada et al. is being filed concurrently with this Amendment.

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

II. The Rejection Of Claims 1-15 Under 35 U.S.C. § 103

Claims 1-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura et al. (JP 63-316405) in view of Wada et al (USP No. 3,725,836).

As a preliminary matter, page 2, line 7 of the pending Office Action recites “Claims 1-12 are rejected under ...”. However, Applicants would point out that claims 1-15 are pending in the present application, and claims 13-15 are rejected in the remarks on page 4, lines 13-15 of the Office Action. Correction of the record is respectfully requested.

Applicants respectfully submit that Nakamura and Wada fail to render the pending claims obvious for at least the following reasons.

With regard to the present disclosure, amended independent claim 1 recites a static electricity countermeasure component comprising a varistor layer, a board laminated with the varistor layer, and a bismuth oxide diffusing layer provided at the board. The varistor layer

comprises a material including at least bismuth oxide, and the bismuth oxide diffusing layer is provided between the varistor layer and the board.

One feature of amended independent claim 1 is that a static electricity countermeasure component has a bismuth oxide diffusing layer between a varistor layer and a board. For example, as is shown in FIG. 1 of the present drawings, the component has a varistor layer 12 over a board 13(20). In between the varistor layer 12 and the board 13(20) is a bismuth oxide diffusing layer 16.

In contrast, Nakamura and Wada fail to teach or suggest a bismuth oxide diffusing layer. In the pending Office Action, the Examiner admits the failure of Nakamura to teach a varistor layer containing bismuth oxide or a bismuth oxide diffusing layer. However, the Office Action maintains that Wada teaches that a varistor layer having bismuth oxide is diffused to the board. This assertion is based on the teachings of Wada which allegedly discloses a varistor paste applied to an insulating base (board), which is fired in an electrical furnace to bond the zinc oxide powder containing bismuth oxide to the base, presumably forming a bismuth oxide diffusion layer separate from the varistor layer. Accordingly, the Office Action asserts that the combination of Nakamura and Wada renders the pending claims obvious. Applicants respectfully disagree.

It is stated in the Office Action that col. 3, lines 20-52 of Wada teach the above-mentioned limitations deficient in Nakamura. However, a review of this passage shows that this is not so. According to the Response to Arguments section of the Office Action, the Examiner believes that the firing step disclosed in Wada is a *sintering* step, which allegedly diffuses bismuth oxide to the board. However, there is no evidence in either the drawings or the specification to suggest that a bismuth oxide diffusion layer is formed in this process. In fact, the

passages of Wada recited in the Office Action actually suggest that the bismuth oxide does **not** diffuse to the board during the firing step. Furthermore, in a Declaration by Kazuyuki Nishimoto, **one of the inventors of U.S. Patent No. 3,725,836 to Wada**, Mr. Nishimoto **affirms** that a bismuth oxide diffusion layer is not formed in Wada.

Mr. Nishimoto explains in the Declaration that Wada does not disclose or suggest that the bismuth oxide is diffused to the board, because in order for bismuth oxide to diffuse to the board, the bismuth oxide must move freely in the varistor layer. Wada, however, does not allow bismuth oxide to move freely in the varistor layer, and accordingly, bismuth oxide cannot diffuse to the insulating base (board).

The Declaration further explains that Wada prepares the zinc oxide powder containing bismuth oxide contained in the varistor layer by heating the mixture of zinc oxide powder and additives (bismuth oxide) at a high temperature of 1100° to 1500°C and then crushed into fine powder. Mr. Nishimoto explains that it is known to those skilled in the art that the purpose of the sintering of the mixture at a temperature of 1100° to 1500°C is to bond the additive, such as bismuth oxide, firmly to the particles of the zinc oxide powder, which results in the coupling of the particles of zinc oxide to each other via the bismuth oxide.

This powder is then applied to the insulating base (board) and *fired* at the temperature of 400° to 850°C to have zinc oxide particles firmly adhere to the board (column 3, lines 21-28). However, as stated above, before the firing process, *the Bi₂O₃ has already been **firmly bonded** to the zinc oxide powder* by the heating at the high temperature of 1100° to 1500°C (sintering step). The bismuth oxide is not removed from the zinc oxide powder during firing at a temperature of 400° to 850°C. As such, the bismuth oxide does not separate from zinc oxide powder after the

varistor paste is applied to the board, and accordingly, the bismuth oxide does not diffuse to the board to form a separate bismuth oxide layer upon firing.

Thus, the combination of Nakamura and Wada fails to teach or suggest a bismuth oxide diffusing layer provided between the varistor layer and the board. As such, the combination of Nakamura and Wada fails to teach or suggest all of the limitations of amended independent claim 1 of the present disclosure.

As is well known, in order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. As Nakamura and Wada do not disclose a static electricity countermeasure component comprising a varistor layer, a board laminated with the varistor layer, and a bismuth oxide diffusing layer provided at the board, wherein the varistor layer comprises a material including at least bismuth oxide, and the bismuth oxide diffusing layer is provided between the varistor layer and the board, it is apparent that Nakamura and Wada fail to render amended independent claim 1 or any dependent claims thereon obvious. As such, claim 1 is allowable and patentable over the cited prior art and accordingly, the Applicants respectfully request that the § 103 rejection be withdrawn.

III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as independent claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

IV. Conclusion

Having responded to all open issues set forth in the Office Action, it is respectfully submitted that all claims are in condition for allowance.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

A handwritten signature in black ink, appearing to read 'Nathaniel D. McQueen', written in a cursive style.

Nathaniel D. McQueen
Registration No. 53,308

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 NDM:kap
Facsimile: 202.756.8087
Date: September 30, 2010

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as our correspondence address.**